

## **REMARKS**

In addition to the remarks submitted on January 10, 2011, the Applicant respectfully requests for the Examiner to review and take into consideration the remarks submitted herein.

### **I. 35 U.S.C. § 112 Rejections**

Examiner has rejected claims 1 and 2 under 35 U.S.C. §112, first paragraph as failing to comply with the enablement requirement.

The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. Factors that may be considered in determining the level of ordinary skill in the art may include: (A) "type of problems encountered in the art;" (B) "prior art solutions to those problems;" (C) "rapidity with which innovations are made;" (D) "sophistication of the technology; and" (E) "educational level of active workers in the field. In a given case, every factor may not be present, and one or more factors may predominate." In re GPAC, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995); Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc., 1 USPQ2d 1196, 1201 (Fed. Cir. 1986); Environmental Designs, Ltd. V. Union Oil Co., 218 USPQ 865, 868 (Fed. Cir. 1983). "A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton." KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1397 (2007). Office personnel may also take into account "the inferences and creative steps that a person of ordinary skill in the art would employ" Id. at 1396.

The "hypothetical 'person having ordinary skill in the art' to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and engineering principles applicable to the pertinent art." Ex parte Hiyamizu, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988). With regards to the rejection that the specification does not enable the present invention, a person skilled in the art of pastry making having enough skill in

the art and having enough common general knowledge, to use the disclosure of the present invention to perform the invention. It is presumed that this person would have access to everything in the state of the art and have the normal means and capacity for routine work and experimentation. Applicant will address each of the Examiner's concerns raised on page 2 and 3 regarding the enablement of the specification.

(1) In regard to the emulsion step, the amount of olive oil, dextrose, fructose and egg yolk added will depend on the amount of material one wants to make. The emulsion step (a) of claim 1 of the present invention is a water-in-oil emulsion, and thus it is easily conceived by a person of ordinary skills that the water phase should account for an amount of less than 50% (v/v) on total emulsion, while oil should participate in an amount of more than 50% on total emulsion (v/v). Addition of monoglycerides is in amounts of <0.5% on total emulsion weight. The amounts of dextrose and fructose may be easily adjusted by a person of ordinary skill, in order to achieve the desirable organoleptic effects (such as taste and viscosity) in the resulting emulsion (matter of preference). Monoglycerides alone exert strong emulsifying activity, thus rendering the role of yolk (contains lecithin, a common emulsifier), as complementary in this case. Therefore, the amounts of yolk that the person of ordinary skills would choose to make use of depends on the desirable organoleptic properties of the resulting emulsion (matter of preference).

(2) In regards to the "homogenization in a high-speed mixer" as claimed in claim 1, the term homogenization has a clear and plain meaning. Homogenization is defined as the "act of making something homogeneous or uniform in composition." This is a critical parameter for the making of an "emulsion" (page 2, line 6 of the present invention), herein comprised of distilled monoglycerides, water, olive oil, dextrose, fructose and egg yolk. As a general rule, an

essential feature of an emulsion is the small size of the dispersed phase droplets. The mixing speed is a critical influential factor on the fat particle size and distribution. By imposing high shear stress upon the mixture, induced by high mixing rate, the material to be dispersed is broken, into a multitude of fine particles. It is thus a common knowledge that homogenization is promoted by high mixing rates. A regular high-speed mixer, used in food industry, can usually provide approximately up to 3000 rpm. Again, the speed itself is dependent on creating a homogeneous or uniform composition, therefore the speed does not have to be exactly the same in each case. This is well-known by a skilled person of the art as evidenced by the declaration of Domazakis submitted on 4/26/2010.

(3) In regards to other equipment disclosed in the specification and claimed in claims 1 and 2, the inventor makes use of equipment, suited for the preparation of pastry-based products, which are commercially available. Specifically, the terms “cutting-filling-folding machine,” “moulds,” “extruder,” “series of dough motors,” and “mixer” all refer to elements of equipment, suited for the making of the said products and thus known to a person skilled in the art. Further clarifications, regarding the equipment would add unnecessary information into the disclosure. The same applies for the “high microbial quality air” which constitutes a common strategy to extend the microbiological shelf life of bakery products, by preventing post-baking contamination. A high microbial quality air can be achieved, for example, in a filtered air environment or by exposure to UV light. The particular method does not matter for the present invention and therefore, any appropriate way quality air can be achieved is acceptable and enabling.

(4) “The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention,

i.e., as of the effective filing date of the patent application.” Phillips v. AWH Corp., 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) (en banc). Sunrace Roots Enter. Co. v. SRAM Corp., 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003) (“In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art.”).

In regards to the micro-organisms used in the present invention, it is a common knowledge that the term “baker’s leaven” or “baker’s yeast” refers to strains of yeast, commonly the *Saccharomyces cerevisiae*. The term baker’s yeast is a common name, having the following meaning: “Baker’s yeast is the common name for the strains of yeast commonly used as a leavening agent in baking bread and bakery products, where it converts the fermentable sugars present in the dough into carbon dioxide and ethanol. The majority of the yeast used in baking is *Saccharomyces cerevisiae*, which is the same species commonly used in alcoholic fermentation, and so is also called brewer’s yeast.” [http://en.wikipedia.org/wiki/Baker's\\_yeast](http://en.wikipedia.org/wiki/Baker's_yeast) (Source: Wikipedia, 3/3/2010).

The same applies for the term “leaven” which is considered as a commonly used term for a substance used to produce fermentation in a dough and its composition is easily conceived by a person of ordinary skills. According to a common definition, leaven is “any substance that produces, or is designed to produce, fermentation, as in dough or liquids; esp., a portion of fermenting dough, which, mixed with a larger quantity of dough, produces a general change in the mass, and renders it light” (Source: <http://www.definitions.net/definition/leaven>, 3/4/2010). Despite the obviousness of the term, the present invention provides instructions for the preparation of the leaven, as provided, for example, in page 2 lines 9-10, stating that “[t]he liquid

leaven (step 2) is prepared by the inoculation of rye flour with specially formulated microbial cultures” Moreover, a person of ordinary skill in this art would be aware of how to make a proper dough and thus the teaching of precise amounts of flour and water for dough making, are not considered necessary. In any case, the Applicant does not attempt to claim novelty on the making of conventional dough. Rather, the present invention deals with the technological challenge to incorporate olive oil as a sole added fat substance in the making of croissant-type pastry, instead of the traditionally used shortening/butter. This is achieved by combining “direct” and “indirect” oil incorporation in the dough making.

The reference to the terms “combination of microbial cultures” (page 1, line 8 of the present invention) “leaven” and “maturation” (page 2, line 37 of the present invention) makes obvious to a person of ordinary skills, that the “combination of microbial cultures” contains at least one component, namely at least a yeast component, as conventionally used since ancient times. Moreover, with the phrase “the aforementioned were achieved with the use of an emulsion of specific composition.....as well as with the use of liquid leaven prepared by a specific combination of microbial cultures which ensure the consistency of the primary culture as well as that of organoleptic features and the long-term conservation of the final product” it is clearly indicated to a person of ordinary skill in the art that the combined effect of a number of microorganisms is herein used. (Page 1, lines 24-39 of the present invention). The so-called “Sourdough starter” is a stable symbiotic culture of bacteria and yeast present in a mixture of flour and water. The “Sourdough” microflora is composed of stable associations of lactobacilli and yeasts, in particular due to metabolic interactions. The “Sourdough fermentation” therefore, is a process that takes advantage of the combined metabolic activity, resulting in both desirable textural properties and long-term preservation (anti-mould activity). *Saccharomyces cerevisiae*,

for example, alone cannot give the long term preservation by carbon dioxide and alcohol. Therefore, the skilled person in the art can either use antifungal compounds to block the early unavoidable mold growth, such as propionates, or in order to avoid chemical additives, he may use microbial antagonists, such as lactobacilli in the sourdough starter, where the starter culture is made of both lactobacilli and *Saccharomyces sp.* In summary, the term “combination of microbial cultures which ensure the consistency of the primary culture, as well as that of organoleptic features and the long-term conservation of the final product,” clearly indicates the use of a “sourdough” microflora, to a person of ordinary skills. Nonetheless, the production of sourdough bread can be traced back to ancient times.

Moreover, the phrase found on page 2, line 9 of the present invention “[t]he liquid leaven, prepared by the inoculation of rye 10 flour with specially formulated microbial cultures” clearly teaches to a person of ordinary skill in the art the use of the “Sourdough starter.” In addition the following source shows that one of ordinary skill in the art would have known this.

“Sourdough is a dough containing a lactobacillus culture, usually in symbiotic combination with yeasts. It is one of two principal means of leavening in bread baking, along with the use of cultivated forms of yeast (*Saccharomyces*). **It is of particular importance in baking rye-based breads, where yeast does not produce comparable results....**” Wikipedia (viewed 3/22/2010) emphasis added. Therefore, a person of ordinary skill would easily be led to the use of the Sourdough starter, only by combining the given information in the present application with what’s known in the literature or from common practice.

Therefore, the specification is fully enables the claims. If the Examiner would allow it, the Applicant is willing to amend the specification to reflect the above definitions that were known in the art and therefore would not be new matter but would aid in clarifying the present

application.

## **II. Claim Rejections - 35 U.S.C. § 103**

### **A. Obviousness**

When determining the question of obviousness, underlying factual questions are presented which include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time of the invention; (3) objective evidence of nonobviousness; and (4) the differences between the prior art and the claimed subject matter. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). Moreover, with regard to the last prong of the *Graham* inquiry, “[t]o determine whether there was an apparent reason to combine the known elements in the way a patent claims, it will often be necessary to look to interrelated teachings of multiple patents; to the effects of demands known to the design community or present in the marketplace; and to the background knowledge possessed by a person having ordinary skill in the art. To facilitate review, this analysis should be made explicit.” KSR International v. Teleflex Inc., 127 U.S. 1727 (2007).

The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986). The level of ordinary skill in the art in this area may be determined by looking to the references of record. In re GPAC, Inc., 57 F.3d 1573, 35 USPQ2d 1116 (Fed. Cir. 1995). The references of record in this case reveal that a moderately high level of sophistication is present in the subject area of the subject area of the instant application. Thus, Applicant submits that, as substantiated by the cited references, those with at least a bachelor’s degree in food technology or the like would most likely be a person with ordinary skill in this field of endeavor.

With respect to objective evidence of non-obviousness, the Applicant submits that the record supports the conclusion that there are long-felt but unsolved needs met by the present invention. For at least this reason the Applicant respectfully submits that the claimed invention is not obvious in view of the cited references.

Finally, *prima facie* obviousness requires that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references. This motivation-suggestion-teaching test informs the *Graham* analysis. “To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references,” there must be “some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” In re Kahn, (Fed. Cir. 2006). The *KSR International* decision by the Supreme Court has not eliminated the motivation-suggestion-teaching test to determine whether prior art references have been properly combined. Rather, in addition to the motivation-suggestion-teaching test, the Court discussed that combinations of known technology that are “expected” may not be patentable. Stated in the affirmative, therefore, combinations are non-obvious and patentable if unexpected. In the present application, no single prior art reference nor any combination thereof (legitimate or otherwise) meets the claimed limitations of Applicant’s invention.

## II. Rejection of Claim 2

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Dijkshoorn et al. For the following reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.



The Examiner asserts that Dijkourn teaches a baked filled product comprising a filling enclosed inside a bread dough casing. Further, the Examiner asserts that the filling is a meat-based filling comprising cheese and that the food product has an elongated shape but other shapes like cubes, balls and egg-shaped are possible as well. The Examiner asserts that Dijkourn teaches a dough comprising wheat flour, water, margarine, sugar, yeast, glucose, milk powder, salt and egg yolk. The Examiner admits that Dijkourn does not teach the use of olive oil as a substitution other fat in found or used in typical dough.

Dijkourn discloses a baked filled product comprising a filling enclosed inside a bread dough casing. Dijkourn also refers to a particular baked product "architecture" comprising a moisture containing filling enclosed in a bread casing and an intermediate layer separating the filling from the bread-like casing. As disclosed in Dijkourn, the intermediate layer materially retards the negative influence of the moisture of the filling on the organoleptic properties of the bread-like casing upon storage. The technological challenge that Dijkourn aims to confront, as well as the strategies adopted for this purpose, are clearly different from the present invention.

With regards to the intermediate layer in Dijkourn, it has a substantially different composition and thus a different texture, to the emulsion of step 1 as disclosed in the present invention. Specifically, the intermediate layer of Dijkourn is comprised of wheat flour, extruded expanded starch, and baking powder. This combination of ingredients justifies its characterization as a dough or cake batter. By contrast, the emulsion of step (a) of claim 2 of the present invention is a basic emulsion system, resembling in texture a cream-like or a mayonnaise-like composition, comprising of an oil phase (i.e. olive oil), emulsifiers (i.e. distilled monoglycerides and as a complementary ingredient and egg yolk) and water. Therefore, the ingredients used in Dijkourn and in the present invention are substantially different and will

produce altogether different products. For example, following a thermal treatment, the emulsion (step a) would still resemble a cream-mayonnaise like composition. On the other hand, the intermediate layer-preparation of Dijkoom, results in a baked cake, which has optimized characteristics (see Column 2, lines 20-36: "It has been found in extensive experiments that the required fully developed cellular crumb structure and the required level of aeration, leading to a specific volume of the baked cake..."). Therefore, modifying the teachings of Dijkoom is not obvious.

Moreover, according to Dijkoom, incorporation of liquid oil in the cake butter may be facilitated by the use of an absorption agent, in the form of an expanded, at least partially gelatinized, starch. See Claim 17 and Column 5, lines 41-46. This practice is absent from the present invention, for developing the emulsion (step a). Furthermore, as it is shown in the Examples 1 and 2 provided in Dijkoom, the monoglyceride mixture is first prepared. Then, the sodium stearyl lactylate, the oil or/ and fat and then monoglyceride mixture are added to the mixture of dry ingredients. Thus, with the exception of Example IV, there is no clear indication or teaching, with respect to pre-emulsification of oil, as taught by the indirect approach suggested in the patent under examination, but rather the addition of the monoglyceride mixture and the oil as separate ingredients.

In response to the Examiner's argument that it would have been obvious to substitute olive oil for margarine, when desiring a healthier fat, it should be noted that a margarine or butter, are substantially different to a liquid vegetable oil rich in unsaturated fatty acids, such as olive oil. This is due to the content of butter and margarine in saturated fatty acids that create a favorable melting profile, thus rendering them solid at room temperature. Butter, as an animal fat, is high in saturated fatty acids. On the other hand, margarine usually contains trans-fat, i.e.

saturated fatty acids through hydrogenation, or oils of favorable saturated/unsaturated fatty acids' profile or mixtures of oil and butter.

The technological challenge in the case of the present invention was to replace the traditionally used margarine/butter in croissant-type pastries, with olive oil. This challenge was further projected by the fact that such products usually contain a considerable amount of fat. To overcome this technological obstacle, the inventor adopted the strategy of direct and indirect oil incorporation in the croissant-type pastry. Indirect oil incorporation is when an amount of oil to be added was added through an emulsion, comprising olive oil, distilled monoglycerides, water, dextrose, fructose and egg yolk. Direct addition is when an amount of oil to be added, was directly added, along with the "remaining ingredients" in the kneaded dough. Using this strategy, a maximum oil incorporation is ensured. In addition, the said emulsion of the present invention confers supreme mechanical resistance to the dough for its further processing. See page 1, lines 34-36 of the present invention.

Applicant therefore respectfully submits that Dijkshoorn does not teach or suggest all of the limitations of claim 2. With respect to the inventive step, which is required to reach the product of the method disclosed in the present invention, there is absolutely no teaching in Dijkshoorn, regarding a direct and an indirect approach of oil incorporation.

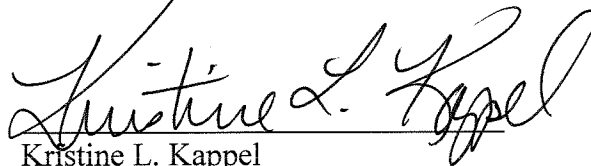
### **III. Conclusion**

Applicant respectfully requests the Examiner to enter this Supplemental Response in conjunction with the Amendment filed on January 10, 2011. If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present supplemental

response to amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard. Should any fees be necessitated by this supplemental response to amendment, the Commissioner is hereby authorized to deduct such fees from Deposit Account No. 11-0160.

Respectfully submitted,

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